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10/560,548	01/30/2006	Daniel Dreyer	534P015	1051

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EXAMINER	
RADEMAKER, CLAIRE L	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/560,548	DREYER ET AL.	
	Examiner	Art Unit	
	CLAIRE L. RADEMAKER	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to the Request for Reconsideration filed on July 14, 2010. Claims 1 and 3-25 are pending and are rejected for reasons of record. Claims 1, 3, and 7 have been amended. Claims 23-25 are new. Claim 2 is cancelled.

2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the Office Action issued on April 28, 2009 which is referred to in the prior office Action issued on March 18, 2010.

Claim Rejections - 35 USC § 103

3. Claims 1, 8-16, 18-20, & 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zucker (WO 03/026038) in view of Abbe et al. (US 3,159,507).

With regard to claims 1, 8-16, & 18, Zucker teaches a separator material for forming a separator for a lead-acid accumulator / battery (page 1, paragraph 1), wherein the separator material comprises:

A first layer in the form of a microporous sheet (3, page 6, paragraph 4), which can be made of a thermoplastic material such as polyethylene (page 6, paragraph 4 - page 7, paragraph 1) having a molecular weight of at least 300,000, a melt index under normal conditions of substantially 0 (zero), and a viscosity number of not less than 600ml/g (page 7, paragraph 1), wherein said polyethylene has a filler content of silica (page 7, paragraph 2), and where said first layer can have a number of protrusions /

ribs, each defining an area of increased film thickness, on at least one face of a base sheet (page 11, paragraph 5 - page 12, line 2), where at least 50% of the pores of the first layer have a diameter of 0.5µm or less (page 10, paragraph 3), and where said first layer has a thickness of 0.02-0.3mm in areas without protrusions (page 11, paragraph 4 – page 12, paragraph 1); and

At least one second layer (2, page 6, paragraph 2) in the form of a planar fleece material which is located on a face of the microporous sheet (page 16, paragraph 2), where the second layer can substantially consist of glass fibers (page 12, paragraphs 2-3), can substantially consist of polyester fibers (page 12, paragraphs 2 & 4, & page 13, paragraph 1), or a mixture of glass fibers and polyester fibers (page 14, paragraph 2 & page 13, paragraph 1), where the at least one planar fleece layer can be bonded to the microporous sheet by ultrasonic welding / ultrasonic sealing (page 16, paragraph 2), and where the at least one planar fleece layer can have a thickness of 0.2-3.6mm (page 15, paragraph 3),

But fails to teach that the second layer is located on a face of the first layer / microporous sheet having such protrusions or that the second layer is located at least at the level of the surface of the first layer / base sheet in the area of the weld joints and does not penetrate into this.

Abbe et al. teaches a separator material for a battery (col. 1, lines 10-15), where said separator material for forming a separator comprises a first layer in the form of a microporous sheet (col. 2, lines 37-41 & 56-63 & col. 4, lines 10-27 & 48-52; Figure 7), which can be made of glass fibers and a synthetic resin of hydrophilic character (col. 5,

lines 11-16) and can have a number of protrusions / ribs, each defining an area of increased film thickness, on at least one face of a base sheet (col. 4, lines 23-27 & col. 5, lines 7-10; Figure 7), and at least one second layer (col. 2, lines 37-41, col. 4, lines 10-12, & col. 5, lines 7-10; Figure 7) in the form of a planar fleece material which is located on a face of the microporous sheet (col. 4, lines 10-12 & col. 5, lines 7-10; Figure 7), wherein the planar fleece material is bonded to at least some of the protrusions / ribs via welded / fused joints on said protrusions / ribs (col. 4, lines 10-12 & col. 5, lines 7-10; Figure 7), and where the fleece material can be located at least at the level of the surface of the base sheet in the area of the welded / fused joints and does not penetrate into this (Figure 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of the second layer being located on a face of the first layer / microporous sheet having such protrusions where the second layer is located at least at the level of the surface of the first layer / base sheet in the area of the weld joints and does not penetrate into this of Abbe et al. to the separator of Zucker in order to create a separator which can meet different conditions, both from the standpoint of structure as well as from the standpoint of operation and gas liberation within the cell (col. 2, lines 45-49).

With regard to claim 19, Zucker teaches a process for the production of a separator material for a battery (page 1, paragraph 1 & page 15, paragraph 3 - page 17, paragraph 1) with the steps:

(a) provision of a microporous sheet having a number of protrusions / ribs, each defining an area of increased film thickness, on at least one face of a base sheet (page 6, paragraph 4 - page 7, paragraph 1, & page 11, paragraph 5 - page 12, line 2);

(b) provision of at least one second layer in the form of a planar fleece material (page 6, paragraph 2, page 16, paragraph 2);

(c) location of the at least one second layer on a face of the microporous sheet (page 16, paragraph 2); and

(d) bonding / welding / fusing the at least one planar fleece layer to the microporous sheet by ultrasonic welding / ultrasonic sealing (page 16, paragraph 2),

But fails to teach that the second layer is located on a face of the first layer / microporous sheet having such protrusions or that the second layer is located at least at the level of the surface of the first layer / base sheet in the area of the weld joints and does not penetrate into this.

Abbe et al. teaches a separator material for a battery (col. 1, lines 10-15), where said separator material for forming a separator comprises a first layer in the form of a microporous sheet (col. 2, lines 37-41 & 56-63 & col. 4, lines 10-27 & 48-52; Figure 7), which can be made of glass fibers and a synthetic resin of hydrophilic character (col. 5, lines 11-16) and can have a number of protrusions / ribs, each defining an area of increased film thickness, on at least one face of a base sheet (col. 4, lines 23-27 & col. 5, lines 7-10; Figure 7), and at least one second layer (col. 2, lines 37-41, col. 4, lines 10-12, & col. 5, lines 7-10; Figure 7) in the form of a planar fleece material which is located on a face of the microporous sheet (col. 4, lines 10-12 & col. 5, lines 7-10;

Figure 7), wherein the planar fleece material is bonded to at least some of the protrusions / ribs via welded / fused joints on said protrusions / ribs (col. 4, lines 10-12 & col. 5, lines 7-10; Figure 7), and where the fleece material can be located at least at the level of the surface of the base sheet in the area of the welded / fused joints and does not penetrate into this (Figure 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of the second layer being located on a face of the first layer / microporous sheet having such protrusions where the second layer is located at least at the level of the surface of the first layer / base sheet in the area of the weld joints and does not penetrate into this of Abbe et al. to the separator of Zucker in order to create a separator which can meet different conditions, both from the standpoint of structure as well as from the standpoint of operation and gas liberation within the cell (col. 2, lines 45-49).

With regard to claim 20, Zucker teaches that the at least one planar fleece layer can be bonded / welded to the microporous sheet by ultrasonic welding / ultrasonic sealing (page 16, paragraph 2).

With regard to claim 22, Zucker teaches that the at least one planar fleece layer can have a thickness of 0.2-3.6mm (page 15, paragraph 3).

With regard to claim 23, modified Zucker fails to teach the concept of at least some of the protrusions disappearing completely during the welding process.

While modified Zucker fails to teach the concept of at least some of the protrusions disappearing completely during the welding process, Abbe et al. does teach the concept of providing a battery separator that can have irregular, uneven, or nonplanar surface configurations, as desired, to meet different conditions, both from the standpoint of structure as well as from the standpoint of operation and gas liberation within the cell (col. 2, lines 42-49). Furthermore, one of ordinary skill in the art would understand that it would be advantageous to make the protrusions along the edge of the separator disappear completely during the welding process in order to form a seal between the fleece material and the thermoplastic sheet where the protrusions were located, thus preventing peeling / separation of the fleece material from the thermoplastic sheet, and minimize fraying or cracking of the fleece material.

With regard to claims 24-25, modified Zucker fails to specifically state how the planar fleece material is located / placed on the face of the microporous sheet having protrusions (i.e. gradually laying one of said planar fleece material and said microporous sheet having protrusions on the other in sections or continuously).

While modified Zucker fails to specifically state how the planar fleece material is located / placed on the face of the microporous sheet having protrusions (i.e. gradually laying one of said planar fleece material and said microporous sheet having protrusions on the other in sections or continuously), one of ordinary skill in the art would

understand that both methods of production have advantages and disadvantages. One of ordinary skill in the art would understand that gradually laying one of said at least one planar fleece material and said microporous sheet having protrusions on the other in sections (the fleece material being located / placed with two or more protrusions at a time) would be a faster method of production, but would result in not every protrusion being welded to the fleece material (i.e. not every protrusion would have a secure connection to the fleece material). However, one of ordinary skill in the art would also understand that while gradually laying one of said at least one planar fleece material and said microporous sheet having protrusions on the other continuously (the fleece material being located / placed with the protrusion at a time) is a slower method of production, this method would ensure reliable connections between each protrusion and the fleece material. Therefore it would have been obvious to one of skill in the art to select whichever method suits the desired production requirements (i.e. (a) faster production, but less secure connections, or (b) more secure connections, but slower production).

4. Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zucker (WO 03/026038) in view of Abbe et al. (US 3,159,507), as applied to claim 1 above, and further in view of Kawai et al. (US 3,210,218).

The disclosure of Zucker and Abbe et al. as discussed above is fully disclosed herein.

With regard to claims 3-4, modified Zucker fails to teach that the protrusions/ribs run vertically and extend over the entire length of the separator or that the separator comprises outermost ribs in each of the two side edge areas.

Kawai et al. teaches a battery separator (col. 1, lines 12-13; Figures 1-3) comprising a microporous sheet (2, col. 1, lines 62-70 & col. 4, lines 49-51) which has protrusions / ribs that run vertically and extend over the entire length of the microporous sheet (col. 1, lines 65-70; Figure 2), where said microporous sheet comprises outermost protrusions/ribs in each of the two side edge areas (Figure 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the design of the microporous sheet with protrusions / ribs of Kawai et al. to the microporous sheet with protrusions / ribs of modified Zucker in order to create a battery separator which has high mechanical strength (col. 1, lines 62-70 & col. 3, lines 40-45).

With regard to claims 5-6, modified Zucker fails to teach that the outermost protrusions / ribs can comprise continuous or discontinuous welded joints.

While modified Zucker fails to teach that the outermost protrusions / ribs can comprise continuous or discontinuous welded joints, it would have been obvious to one of ordinary skill in the art that the welded joints could be made continuous in order to provide a better seal or could be made discontinuous in order to decrease manufacturing time and cost.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zucker (WO 03/026038) in view of Abbe et al. (US 3,159,507), as applied to claim 1 above, and further in view of Farahmandi et al. (US 2001/0020319).

The disclosure of Zucker and Abbe et al. as discussed above is fully disclosed herein.

With regard to claim 7, modified Zucker fails to specifically state that the welded joints can be bonded by spot-welding.

Farahmandi et al. teaches that spot welding and ultrasonic welding are two suitable bonding techniques (paragraph [0235]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of bonding via spot-welding of Farahmandi et al. to the bonding technique of modified Zucker because spot-welding is known to be an effective method of bonding and one would have a reasonable expectation of success sin doing so.

Furthermore, it is noted that the product-by-limitations of claim 7 are not given patentable weight since the courts have held that patentability is based on a product itself, even if the prior art product is made by a different process (*In re Thorpe*, 227 USPQ 964, 1985). Moreover, a product-by-process limitation is held to be obvious if the product is similar to a prior art product (*In re Brown*, 173 USPQ 685, and *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Claim 7 as written does not distinguish the product of the instant application from the product of the prior art.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zucker (WO 03/026038) in view of Abbe et al. (US 3,159,507), as applied to claim 16 above, and further in view of Kawai (JP 55-146872).

The disclosure of Zucker and Abbe et al. as discussed above is fully disclosed herein.

With regard to claim 17, modified Zucker fails to teach the concept of the fleece layer comprising a specified amount of glass fibers.

Kawai teaches the concept of a battery separator comprising a mixture of glass fibers and polyethylene fibers in a ratio of 70wt% of glass fiber and 30wt% of polyethylene fiber in order to prevents short circuit at the time of over discharge (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of having a separator comprise a mixture of glass fibers

and polyethylene fibers in a ratio of 70wt% of glass fiber and 30wt% of polyethylene fiber of Kawai to the fleece layer of the separator of modified Zucker in order to produce a separator that prevents short circuit at the time of over discharge (abstract).

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zucker (WO 03/026038) in view of Abbe et al. (US 3,159,507), as applied to claim 20 above, and further in view of Bohnstedt et al. (US 2003/0129486).

The disclosure of Zucker and Abbe et al. as discussed above is fully disclosed herein.

With regard to claim 21, Zucker teaches bonding / welding / fusing the at least one planar fleece layer to the microporous sheet by ultrasonic welding / ultrasonic sealing (page 16, paragraph 2) and that the microporous sheet can have a number of protrusions / ribs, each defining an area of increased film thickness, on at least one face of a base sheet / first layer (page 11, paragraph 5 - page 12, line 2), but fails to teach that the planar fleece material is bonded to at least some of the protrusions / ribs via welded / fused joints on said protrusions / ribs or teach specifically state the height of the protrusions.

Abbe et al. teaches that the planar fleece material is bonded to at least some of the protrusions / ribs via welded / fused joints on said protrusions / ribs of the microporous sheet (col. 4, lines 10-12 & col. 5, lines 7-10; Figure 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of having the planar fleece material be bonded to at least

some of the protrusions / ribs via welded / fused joints on said protrusions / ribs of the microporous sheet of Abbe et al. to the separator of Zucker because this is a known method of welding / bonding a planar fleece material to a microporous sheet and one would have a reasonable expectation of success in doing so.

Modified Abbe et al. fails to specifically state the height of the protrusions.

Bohnstedt et al. teaches the concept of a battery separator having ribs have a height of 0.3-1.3mm, and preferably about 0.5mm (paragraph [0019]) while the base thickness (separator thickness not including the protrusions) is 0.1-0.6mm (paragraph [0017]) in order to reliably maintain electrode distance during use and ensure electrical isolation of the electrode plates (paragraphs [0008] & [0012]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the concept of having ribs of height 0.3-1.3mm, preferably about 0.5mm of Bohnstedt et al. to the separator of modified Zucker in order to reliably maintain electrode distance during use and ensure electrical isolation of the electrode plates (paragraphs [0008] & [0012]).

Response to Arguments

Claim Rejections - 35 USC § 103

8. Applicant's arguments with respect to claims 1 and 3-22, filed on July 14, 2010, have been considered but are not persuasive.

On page 3 of the Applicant's Response, Applicants argue that "Abbe is explicit in its limitation to provide a battery separator made wholly of glass fibers, whereas in contrast thereto, the present invention relates to a separator material for forming a separator for a lead-acid accumulator wherein the separator material comprises a first layer in the form of a microporous sheet, which is made of a thermoplastic" (Applicant's Response, page 3).

In response to the Applicant's argument that "Abbe is explicit in its limitation to provide a battery separator made wholly of glass fibers, whereas in contrast thereto, the present invention relates to a separator material for forming a separator for a lead-acid accumulator wherein the separator material comprises a first layer in the form of a microporous sheet, which is made of a thermoplastic" (Applicant's Response, page 3), the Examiner notes that:

1) Zucker teaches a separator material for forming a separator for a lead-acid accumulator / battery, wherein the separator material comprises a first layer in the form of a microporous sheet, which can be made of a thermoplastic material (page 6, paragraph 4 - page 7, paragraph 1); and

2) Abbe is only used to teach the concept of the second layer being located on a face of the first layer / microporous sheet / base sheet having protrusions where the second layer / planar fleece material is located at least at the level of the surface of the first layer / microporous sheet / base sheet in the area of the weld joints and does not penetrate into said first layer / microporous sheet / base sheet.

Therefore, this argument is not persuasive.

On page 4 of the Applicant's Response, Applicants argue that "according to the inventors, the fleece material would penetrate into the microporous layer in the area of the welded joints if the latter were created by placing the fleece material onto the base sheet. Such penetration can only be avoided by placing the fleece material onto one or more protrusions of the film and by welding the fleece material in the protrusions" (Applicant's Response, page 4).

The Examiner respectfully disagrees with the Applicants argument that "according to the inventors, the fleece material would penetrate into the microporous layer in the area of the welded joints if the latter were created by placing the fleece material onto the base sheet. Such penetration can only be avoided by placing the fleece material onto one or more protrusions of the film and by welding the fleece material in the protrusions" (Applicant's Response, page 4) because:

1) It is unclear from the Applicants argument exactly what the difference is between (a) creating weld joints by placing the fleece material onto the base sheet / microporous sheet protrusions and then welding the protrusions and (b) placing fleece material onto one or more protrusions of the base sheet / microporous sheet and then welding the protrusions;

2) The separator of modified Zucker is made in the same manner as the instant invention, and therefore it is unclear how/why the product resulting from the method of

modified Zucker would differ from the product resulting from the method as instantly claimed; and

3) Abbe teaches the concept of the second layer being located on a face of the first layer / microporous sheet / base sheet having protrusions where the second layer / planar fleece material is located at least at the level of the surface of the first layer / microporous sheet / base sheet in the area of the weld joints and does not penetrate into said first layer / microporous sheet / base sheet.

Therefore, this argument is not persuasive.

On pages 4-5 of the Applicant's Response, Applicants argue that "the Examiner refers to the teaching in Abbe in column 5, lines 11-16 of a microporous sheet that 'can be made of glass fibers and a synthetic resin of hydrophilic character'. Applicants respectfully submit that this quotation from Abbe is truncated and is therefore misleading insofar as the actual teaching in Abbe.... 'union obtained by initial fusion of the glass fibers may be reinforced by impregnation of the separator with an appropriate synthetic resin of hydrophilic character..." (Applicant's Response, page 4).

In response to the Applicant's argument that "the Examiner refers to the teaching in Abbe in column 5, lines 11-16 of a microporous sheet that 'can be made of glass fibers and a synthetic resin of hydrophilic character'. Applicants respectfully submit that this quotation from Abbe is truncated and is therefore misleading insofar as the actual teaching in Abbe.... 'union obtained by initial fusion of the glass fibers may be reinforced

by impregnation of the separator with an appropriate synthetic resin of hydrophilic character..." (Applicant's Response, page 4) and that "impregnating the glass fibers with hydrophilic resin does not result in a separator having a firs layer in the form of a microporous sheet" (Applicant's Response, page 5), the Examiner notes that:

1) It is unclear exactly why the Applicant feels the Examiner's citation of column 5, lines 11-16 of Abbe was misleading. The Examiner cited this section (col. 5, lines 11-16) to point out that Abbe teaches a separator comprising a microporous sheet comprising glass fibers and a synthetic resin of hydrophilic character. While Abbe does state that the microporous sheet can be made of glass fibers reinforced by impregnation with an appropriate synthetic resin of hydrophilic character (col. 5, lines 11-16), this does not necessarily make the microporous sheet / glass fiber sheet not porous. Abbe states that the microporous sheet can include a plurality of juxtaposed layers of relatively rigid microporous agglomerated fibers and a relatively more porous resilient layer of fibers (col. 2, lines 37-42). The Examiner's interpretation of this statement by Abbe is that the glass fiber layer impregnated with synthetic resin would still be porous, but not as porous as a layer made wholly of glass fibers; and

2) The Examiner reiterates that Abbe is only used to teach the concept of the second layer being located on a face of the first layer / microporous sheet / base sheet having protrusions where the second layer / planar fleece material is located at least at the level of the surface of the first layer / microporous sheet / base sheet in the area of the weld joints and does not penetrate into said first layer / microporous sheet / base sheet.

Therefore, this argument is not persuasive.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLAIRE L. RADEMAKER whose telephone number is (571)272-9809. The examiner can normally be reached on Monday - Thursday, 8:00AM - 4:00PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. L. R./
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795